

Lessard-Sams Outdoor Heritage Council

Laws of Minnesota 2011 Final Report



Date: August 07, 2018

Program or Project Title: Coldwater Fish Habitat Enhancement Program, Phase 3

Funds Recommended: \$1,533,000

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Legislative Citation: ML 2011, First Sp. Session, Ch. 6, Art. 1, Sec. 2, Subd. 5(b)

Appropriation Language: \$1,533,000 the first year is to the commissioner of natural resources for an agreement with Minnesota Trout Unlimited to restore, enhance, and protect coldwater river and stream habitats in Minnesota. A list of proposed projects, describing types and locations of restorations and enhancements, must be provided as part of the required accomplishment plan.

County Locations: Fillmore, Goodhue, Lake, Nicollet, Olmsted, St. Louis, Wabasha, and Winona.

Regions in which work was completed:

- Northern Forest
- Southeast Forest
- Prairie

Activity types:

- Enhance

Priority resources addressed by activity:

- Habitat

Summary of Accomplishments:

Minnesota Trout Unlimited enhanced in-stream and riparian fish and wildlife habitat in and along coldwater streams located on public lands and Aquatic Management Areas. We completed all 9 projects originally proposed and three additional. Contracting efficiencies and leveraging of other funding allowed us to add two habitat enhancement projects in southeast Minnesota and another segment on the Sucker River in northeast Minnesota. We enhanced 10 more acres of habitat than originally proposed and increased leverage by \$121,700 (67%).

Process & Methods:

The projects completed with Fy2012 funding used methods similar to those used on projects completed by MNTU chapters in the past several years and also incorporated new research to improve project designs and fish and wildlife benefits.

The specific fish habitat enhancement methods used on each stream varied depending upon the distinct natural resource characteristics of each watershed and ecological region, the limiting factors identified for each stream, and the variations in the type and magnitude of poor land uses practices within each watershed. MNTU tailored each project accordingly, using the best available science, in close consultation with resource professionals within the Minnesota Department of Natural Resources ("MNDNR").

Purposes: Each project was designed and completed using techniques selected to accomplish one or more of the following purposes: (a) reduce stream bank erosion and associated sedimentation downstream; (b) reconnect streams to their floodplains to reduce

negative resource impacts from severe flooding; (c) increase natural reproduction of trout and other aquatic organisms; (d) maintain or increase adult trout abundance; (e) increase habitat and biodiversity for both invertebrates and other non-game species; (f) be long lasting with minimal maintenance required; and (g) improve angler access and participation.

Habitat enhancement methods: Methods used on each project included one or more of the following techniques: (1) sloping back stream banks to both remove accumulated sediments eroded from uplands areas and better reconnect the stream to its floodplain; (2) removing undesirable woody vegetation (invasive box elder, buckthorn, etc.) from riparian corridors to enable removal of accumulated sediments, reduce competition with desirable plant and grass species, and allow beneficial energy inputs (sunlight) to reach the streams; (3) stabilizing eroding stream banks using vegetation and/or rock; (4) selectively installing overhead and other in-stream cover for trout; (5) installing soil erosion prevention measures; (6) mulching and seeding exposed stream banks (including with native prairie plant species where appropriate and feasible); (7) improving or maintaining stream access roads and stream crossings to reduce erosion; (8) fencing grassy riparian corridors, including in such a way as to facilitate managed grazing, in order to prevent damage from over grazing; (9) placing large logs in northern forested streams to restore cover logs removed a half century or more ago; and (10) in northern forested watersheds with little cold groundwater, planting desirable trees in riparian areas to provide shade for the stream channel and help cool the water.

Agricultural area example: Many streams in the agricultural areas of southern and central Minnesota have been negatively impacted by many decades of poor land management practices. The projects in southeast Minnesota used the following approach to address this:

Erosion has led to wider, shallower and warmer streams, as well as excessive streamside sediments which regularly erode, covering food production and trout reproduction areas. In many cases shallow rooted invasive trees have taken over the riparian corridors, out competing native vegetation which better secures soils, and reducing energy inputs to the stream ecosystem. To remedy this, a typical enhancement project will involve several steps. First, invasive trees are removed from the riparian zone and steep, eroding banks are graded by machinery to remove excess sediments deposited here from upland areas. Importantly, this reconnects the stream to its floodplain. Since many of these agricultural watersheds still experience periodic severe flooding, select portions of the stream banks are then reinforced with indigenous rock. In lower gradient watersheds, or watersheds where flows are more stable, little or no rock is used. After enhancement work is completed the streams flow faster and become deeper, keeping them cooler and providing natural overhead cover through depth and the scouring of sediments deposited by decades of erosion.

Second, overhead cover habitat is created. Bank degradation and the removal of native prairie have dramatically decreased protective overhead cover in the riparian zone. Two methods are used to remedy this situation: increasing the stream's depth, which alone provides natural cover to trout, and installing overhead cover structures in select stream banks. Wooden structures are often installed into banks in hydraulically suitable locations and reinforced with rock as a way to restore or recreate the undercut banks which had existed before settlement and agricultural land use altered the more stable flows which had gradually created and maintained them.

Finally, vegetation is reestablished in the re-graded riparian corridor to further stabilize banks and act as buffer strips to improve water quality. Depending upon the specific site conditions, landowner cooperation, and agricultural use, native prairie grasses may be planted along the stream corridors, although often mixed with fast sprouting annual grains to anchor soils the first year.

Taken together, these actions directly enhance physical habitat, and typically increase overall trout abundance, population structure, the number of larger trout, and levels of successful natural reproduction. In addition to the benefits to anglers of increased trout habitat and trout abundance, project benefits extending well downstream include reduced erosion and sedimentation, cooler water temperatures, improved water quality and numerous benefits to aquatic and terrestrial wildlife populations.

The following projects, totaling more than 7.5 miles of stream and 91 acres, were completed with FY2012 funds:

1. Garvin Brook (Winona);
2. Hay Creek (Goodhue);
3. Seven Mile Creek (Nicollet);
4. Little Isabella River (Lake);
5. Manitou River (Lake);
6. Sucker River (St. Louis) - Ryan Road section;
7. Sucker River (St. Louis) - Old North Shore Road section;
8. Cold Spring Brook (Wabasha);
9. Mill Creek (Olmsted);
10. Pine Creek (Winona);
11. Blagsvedt Creek (Fillmore); and
12. South Fork Root River.

Explain Partners, Supporters, & Opposition:

The DNR Fisheries Section was an important partner on every project. We also partnered with the National Fish & Wildlife Foundation, US Fish & Wildlife Service, NRCS and others to leverage and spend an additional \$301,700 on FY2012 projects, including three added projects. This allowed us to enhance 10 more acres of habitat than originally proposed. There was no opposition to any of the projects, but much support and encouragement.

Additional Comments:

Exceptional challenges, expectations, failures, opportunities, or unique aspects of program

The leveraging of substantial federal funding on several projects, together with effective contracting, combined to create unanticipated "budget space" in this grant round. This created great opportunities to add additional habitat projects. We did this and even leveraged more funding (\$121,700) which was applied to work on the ground. This created its own set of challenges pushing to ensure all added work was completed as quickly as possible. In one case, the possibility of a quality habitat project being done led a reluctant landowner to convey a permanent conservation easement to the State and fill the last remaining gap in protection in a large aquatic habitat complex.

Other Funds Received:

- Not Listed

How were the funds used to advanced the program:

Not Listed

What is the plan to sustain and/or maintain this work after the Outdoor Heritage Funds are expended:

Each enhancement project was designed for long-term ecological and hydraulic stability. Once riparian vegetation becomes well established, no significant maintenance is usually required in order to sustain the habitat outcomes for several decades. Reconnected floodplains allow floodwater to quickly spread out and dissipate energy, reducing the destructive impact of a flood. Flood waters typically flatten streamside vegetation temporarily and do not damage the in-stream structures.

We anticipate that long-term monitoring of the integrity of the improvements will be done in conjunction with routine inspections and biological monitoring conducted by local MNDNR staff, MNTU members, or landowners as appropriate. In the event that there are significant maintenance costs, potential sources of funding and volunteer labor include MNTU, MNDNR AMA maintenance funding, and other grant funds and organizations. MNTU volunteers will help provide long-term monitoring and periodic labor.

Outcomes:

The original accomplishment plan stated the program would

Programs in the northern forest region:

- Not Listed

How will the outcomes be measured and evaluated?

One outcome we expect is improved aquatic habitat indicators, which will be measured over time via fish population surveys conducted by the MNDNR.

Programs in southeast forest region:

- Not Listed

How will the outcomes be measured and evaluated?

One outcome we expect is improved aquatic habitat indicators, which will be measured over time via fish population surveys conducted by the MNDNR.

Programs in prairie region:

- Not Listed

How will the outcomes be measured and evaluated?

One outcome we expect from the Seven Mile Creek project is increased angling opportunities here which will draw increased use and enjoyment by anglers. The DNR can periodically measure angling usage by angler interviews and less formal reports from media, individuals, etc.

Budget Spreadsheet

Final Budget line item reallocations are allowed up to 10% and do not need require an amendment to the Accomplishment Plan

Total Amount: \$1,533,000

Budget and Cash Leverage

BudgetName	Request	Spent	Cash Leverage (anticipated)	Cash Leverage (received)	Leverage Source	Total (original)	Total (final)
Personnel	\$90,000	\$72,500	\$0	\$0		\$90,000	\$72,500
Contracts	\$820,000	\$919,800	\$85,000	\$199,100	various federal	\$905,000	\$1,118,900
Fee Acquisition w/ PILT	\$0	\$0	\$0	\$0		\$0	\$0
Fee Acquisition w/o PILT	\$0	\$0	\$0	\$0		\$0	\$0
Easement Acquisition	\$0	\$0	\$0	\$0		\$0	\$0
Easement Stewardship	\$0	\$0	\$0	\$0		\$0	\$0
Travel	\$0	\$3,800	\$0	\$0		\$0	\$3,800
Professional Services	\$0	\$0	\$0	\$0		\$0	\$0
Direct Support Services	\$0	\$0	\$0	\$0		\$0	\$0
DNR Land Acquisition Costs	\$0	\$0	\$0	\$0		\$0	\$0
Capital Equipment	\$0	\$0	\$0	\$0		\$0	\$0
Other Equipment/Tools	\$20,000	\$20,200	\$20,000	\$0		\$40,000	\$20,200
Supplies/Materials	\$603,000	\$516,700	\$75,000	\$102,600	various federal	\$678,000	\$619,300
DNR IDP	\$0	\$0	\$0	\$0		\$0	\$0
Total	\$1,533,000	\$1,533,000	\$180,000	\$301,700		\$1,713,000	\$1,834,700

Personnel

Position	FTE	Over # of years	Spent	Cash Leverage	Leverage Source	Total
Program manager	0.43	3.00	\$61,500	\$0		\$61,500
Program coordinator	0.13	3.00	\$11,000	\$0		\$11,000
Program assistant	0.13	3.00	\$0	\$0		\$0
Total	0.69	9.00	\$72,500	\$0		\$72,500

Explain any budget challenges or successes:

The DNR Fisheries Section was an important partner on every project. We also partnered with the National Fish & Wildlife Foundation, US Fish & Wildlife Service, NRCS and others to leverage and spend an additional \$301,700 on Fy2012 projects, including three added projects. This allowed us to enhance 10 more acres of habitat than originally proposed.

All revenues received by the recipient that have been generated from activities on land with money from the OHF:

Total Revenue: \$0
 Revenue Spent: \$0
 Revenue Balance: \$0

- E. This is not applicable as there was no revenue generated.

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands (original)	Wetlands (final)	Prairies (original)	Prairies (final)	Forest (original)	Forest (final)	Habitats (original)	Habitats (final)	Total (original)	Total (final)
Restore	0	0	0	0	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	0	0	81	91	81	91
Total	0	0	0	0	0	0	81	91	81	91

Table 2. Total Funding by Resource Type

Type	Wetlands (original)	Wetlands (final)	Prairies (original)	Prairies (final)	Forest (original)	Forest (final)	Habitats (original)	Habitats (final)	Total (original)	Total (final)
Restore	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$0	\$0	\$1,533,000	\$1,533,000	\$1,533,000	\$1,533,000
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$1,533,000	\$1,533,000	\$1,533,000	\$1,533,000

Table 3. Acres within each Ecological Section

Type	Metro Urban (original)	Metro Urban (final)	ForestPrairie (original)	Forest Prairie (final)	SE Forest (original)	SE Forest (final)	Prairie (original)	Prairie (final)	N Forest (original)	N Forest (final)	Total (original)	Total (final)
Restore	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	65	74	6	4	11	13	82	91
Total	0	0	0	0	65	74	6	4	11	13	82	91

Table 4. Total Funding within each Ecological Section

Type	Metro Urban (original)	Metro Urban (final)	ForestPrairie (original)	Forest Prairie (final)	SE Forest (original)	SE Forest (final)	Prairie (original)	Prairie (final)	N Forest (original)	N Forest (final)	Total (original)	Total (final)
Restore	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$1,354,000	\$1,348,800	\$80,000	\$104,600	\$99,000	\$79,600	\$1,533,000	\$1,533,000
Total	\$0	\$0	\$0	\$0	\$1,354,000	\$1,348,800	\$80,000	\$104,600	\$99,000	\$79,600	\$1,533,000	\$1,533,000

Target Lake/Stream/River Feet or Miles (original)

6.75

Target Lake/Stream/River Feet or Miles (final)

7.5 miles

Explain the success/shortage of acre goals:

Minnesota Trout Unlimited enhanced in-stream and riparian fish and wildlife habitat in and along coldwater streams located on public lands and Aquatic Management Areas. We originally proposed 9 projects, yet completed 12 projects. Contracting efficiencies and leveraging of other funding allowed us to add two more habitat enhancement projects in southeast Minnesota and another segment on the Sucker River in northeast Minnesota. We enhanced habitat on 91 acres, rather than just the 81 acres originally proposed.

Parcel List

Section 1 - Restore / Enhance Parcel List

Fillmore

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Blagsvedt Creek	10209224	5	\$73,300	Yes	Enhance 2,300 for brook and brown trout.
South Fork Root River	10208203	7	\$57,700		Enhance habitat along approximately 3,100 foot reach connecting gap in habitat corridor.

Goodhue

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Hay Creek	11215213	11	\$219,800	Yes	Enhance habitat on 5,000 feet as part of larger project.

Lake

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Little Isabella River	06009225	3	\$5,000	Yes	Enhance brook trout habitat in 1,500 foot reach located in National forest campground.
Manitou River	05907227	3	\$15,700	Yes	Enhance habitat for brook trout in 1,500 foot reach near coldwater refuge.

Nicollet

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Seven Mile Creek	10927212	4	\$104,600	Yes	Enhance trout habitat in 1,700 foot reach in popular county park.

Olmsted

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Mill Creek	10512225	12	\$284,700	Yes	Enhance habitat for wild brown trout in one mile reach.

St. Louis

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Sucker River	05112204	2	\$20,100	Yes	Enhance 1,000 foot reach for juvenile steelhead in flood damaged reach.
Sucker River	05212230	4	\$38,800	Yes	Enhance 1,700 foot reach torn up by historic flood.

Wabasha

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Cold Spring Brook	11013230	12	\$298,400	Yes	Enhance habitat for brook and brown trout along mile of stream.

Winona

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Garvin Brook	10608205	14	\$113,600	Yes	Enhance 6,300 foot reach torn apart by flood.
Pine Creek	10508232	12	\$301,300	Yes	Enhance second mile for wild brown trout.

Section 2 - Protect Parcel List

No parcels with an activity type protect.

Section 2a - Protect Parcel with Bldgs

No parcels with an activity type protect and has buildings.

Section 3 - Other Parcel Activity

No parcels with an other activity type.

Completed Parcel: Blagsvedt Creek

# of Total Acres:	5
County:	Fillmore
Township:	102
Range:	09
Direction:	2
Section:	24
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	2300 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Blagsvedt Creek
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$73,300

Completed Parcel: Cold Spring Brook

# of Total Acres:	12
County:	Wabasha
Township:	110
Range:	13
Direction:	2
Section:	30
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	5280 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Cold Spring Brook
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$298,400

Completed Parcel: Garvin Brook

# of Total Acres:	14
County:	Winona
Township:	106
Range:	08
Direction:	2
Section:	05
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	6300 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Garvin Brook
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$113,500

Completed Parcel: Hay Creek

# of Total Acres:	11
County:	Goodhue
Township:	112
Range:	15
Direction:	2
Section:	13
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	5000 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Hay Creek
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$219,800

Completed Parcel: Little Isabella River

# of Total Acres:	3
County:	Lake
Township:	060
Range:	09
Direction:	2
Section:	25
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	1500 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Little Isabella River
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$5,000

Completed Parcel: Manitou River

# of Total Acres:	3
County:	Lake
Township:	059
Range:	07
Direction:	2
Section:	27
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	1500 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Manitou River
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$15,700

Completed Parcel: Mill Creek

# of Total Acres:	12
County:	Olmsted
Township:	105
Range:	12
Direction:	2
Section:	25
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	5280 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Mill Creek
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$284,700

Completed Parcel: Pine Creek

# of Total Acres:	12
County:	Winona
Township:	105
Range:	08
Direction:	2
Section:	32
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	5280 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Pine Creek
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$296,300

Completed Parcel: Seven Mile Creek

# of Total Acres:	4
County:	Nicollet
Township:	109
Range:	27
Direction:	2
Section:	12
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	1700 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Seven Mile Creek
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$104,600

Completed Parcel: South Fork Root River

# of Total Acres:	7
County:	Fillmore
Township:	102
Range:	08
Direction:	2
Section:	03
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	3100 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	So Fork Root River
Has there been signage erected at the site:	
Total cost of Restoration/Enhancement:	\$57,700

Completed Parcel: Sucker River

# of Total Acres:	4
County:	St. Louis
Township:	052
Range:	12
Direction:	2
Section:	30
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	1700 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Sucker River
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$38,800

Completed Parcel: Sucker River

# of Total Acres:	2
County:	St. Louis
Township:	051
Range:	12
Direction:	2
Section:	04
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	1000 (Linear Feet)
Name of Adjacent Body of Water (if applicable):	Sucker River
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$20,100

Parcel Map

Coldwater Fish Habitat Enhancement Program, Phase 3

